

Abstract

Permeable Inlet Fuel Gas Distributor for Fuel Cells

5 An inlet fuel distributor (10-10d) has a permeable baffle (39, 54, 54a, 60) between a fuel supply pipe (11, 83) and a fuel inlet manifold (12, 53, 53a, 63) causing fuel to be uniformly distributed along the length of the fuel inlet manifold. A surface (53, 68) may cause impinging fuel to turn and flow substantially omnidirectionally improving its uniformity. Recycle fuel may be provided (25, 71) into the flow downstream of the fuel inlet distributor. During startup, fuel or inert gas within the inlet fuel distributor and the fuel inlet manifold
10 may be vented through a valve (57, 86) in response to a controller (58, 79) so as to present a uniform fuel front to the inlets of the fuel flow fields (58).